QC ABSTRACT

NAME OF WORK: Improvements CC Road and Drain and Slabs at Kattigenahalli in Ward No.05 Byatarayanapura Sub Division

SL NO	Item Of Work	Name of Test	Frequency of Test/Quantity	Executed Quantity	Number of Tests Required	Number of Tests Conducted
		Materials				
1	Cement	Fineness by dry sieving	One Test		1	1
		Finess by Air permeablity method	One Test		1	1
		Density	One Test		1	1
		Standard Consistency	One Test		1	1
		Initial Setting time	One Test		1	1
		Final Setting time	One Test		1	1
		Soundness (Le Chatelier's Method)	One Test		1	1
		Compressive Strength	One Test		1	1
2	Coarse aggregate(40 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
3	Coarse aggregate(20 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
		Aggregate crushing Value	One Test		1	1
		Aggregate Impact Value	One Test		1	1
4	Fine aggregate	SIEVE ANALYSIS	One Test		1	1
		Water Absorption	One Test		1	1
		Specific Gravity	One Test		1	1
		Material finer than 75 micron	One Test		1	1
5	Steel	Bend test	One Test		1	1
		Tensile Test	One Test		1	1
		Yield Test	One Test		1	1
		ReBend test	One Test		1	1
6	Precast (100mm)	Core Compressive Strength	One Test		1	1
		Corrected Cylinder Compressive Strength	One Test		1	1
		Equivalent Cube Compressive Strength	One Test		1	1
7	Precast (250mm)	Core Compressive Strength	One Test		1	1
		Corrected Cylinder Compressive Strength	One Test		1	1
		Equivalent Cube Compressive Strength	One Test		1	1

Pd. verify & put up
19/8/2020

8	Drain Bottom Slab Concrete M20	Compressive Strength(7days and 28days)	6 set /100-150 cum	125.68	12	12
9	Drain Side Wall Concrete M20	Compressive Strength(7days and 28days)	7 set /150-200 cum	175.4	14	14
10	Drain Side Filling Concrete M20	Compressive Strength(7days and 28days)	3 set 16-30 cum	16.61	6	6
11	Cement Concrete Pavemet M30	Compressive Strength(7days and 28days)	4set /31-50 cum	33.15	8	8
12	WMM	Sieve Analysis	One Test		1	1
		Impact Value	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2020-01-30-84** **Date: 09-11-19**
Project Name	:	Improvements CC Road and Drain and Slabs at Kattigenahalli in Ward No.05 Byatarayanapura Sub Division
Agency	:	Executive Engineer, KRIDL, Bangalore.
Customer's Reference	:	EE(Project)/Ynk Zone/WO/65/2019-20
Date of Receipt	:	06-11-19
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	07-11-19
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	1.95	–
2	Finess by Air permeablity method (m^2/kg,Min)	285.4	225m^2/kg, Min
3	Density (gm/cc)	3.12	–
4	Standard Consistency (%)	29.5%	Not specified
5	Initial Setting time	145 minutes	Not less than 30 minutes
6	Final Setting time	240 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.5mm	Not more than 10 mm

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2020-01-30-84** **Date: 05-12-19**
Project Name	:	Improvements CC Road and Drain and Slabs at Kattigenahalli in Ward No.05 Byatarayanapura Sub Division
Agency	:	Executive Engineer, KRIDL, Bangalore.
Customer's Reference	:	EE(Project)/Ynk Zone/WO/65/2019-20
Date of Receipt	:	06-11-19
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	07-11-19
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	28.5N/mm^2	Not less than 27 N/mm^2
2	7 Days	39.0N/mm^2	Not less than 37 N/mm^2
3	28 Days	58.5N/mm^2	Not less than 53 N/mm^2

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2020-01-30-84** **Date: 09-11-19**
Project Name	:	Improvements CC Road and Drain and Slabs at Kattigenahalli in Ward No.05 Byatarayanapura Sub Division
Agency	:	Executive Engineer, KRIDL, Bangalore.
Customer's Reference	:	EE(Project)/Ynk Zone/WO/65/2019-20
Date of Receipt	:	06-11-19
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	06-11-19

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	244	244	1.6	98.4	90-100
3	20 mm	5432	5676	37.8	62.2	30-70
4	10 mm	4332	10008	66.7	33.3	10-35
5	4.75 mm	4654	14662	97.7	2.3	0-5
6	Pan	338	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2020-01-30-84 Date: 09-11-19

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	12.4	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11.8	
3	Specific Gravity	2.68	_
4	Bulk Density(Loose) (Kg/l)	1.48	_
5	Bulk Density(Compacted) (Kg/l)	1.52	_
6	Water Absorption(%)	0.22	_

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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2020-01-30-84** **Date: 08-11-19**
Project Name	:	Improvements CC Road and Drain and Slabs at Kattigenahalli in Ward No.05 Byatarayanapura Sub Division
Agency	:	Executive Engineer, KRIDL, Bangalore.
Customer Reference	:	EE(Project)/Ynk Zone/WO/65/2019-20
Date of Receipt	:	06-11-19
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	06-11-19

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	245	245	4.9	95.1	90-100
3	10 mm	2560	2805	56.1	43.9	25-55
4	4.75 mm	2033	4838	96.8	3.2	0-10
5	Pan	162	5000	100	0	_

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TEST REPORT ON COARSE AGGREGATES

: CP-2020-01-30-84 **Date: 08-11-19**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	**13.2**	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	**12.6**	
3	Specific Gravity	**2.66**	_
4	Bulk Density(Loose) (Kg/l)	**1.54**	_
5	Bulk Density(Compacted) (Kg/l)	**1.58**	_
6	Water Absorption(%)	**0.22**	_
7	Aggregate crushing Value(%)	**24.5**	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	**22.8**	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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R KARTHIK RECHAN
Authorized Signature
Quality Manager

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9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST REPORT OF FINE AGGREGATE

: **CP-2020-01-30-84** **Date: 08-11-19**

: Improvements CC Road and Drain and Slabs at Kattigenahalli in Ward No.05 Byatarayanapura Sub Division

: Executive Engineer, KRIDL, Bangalore.

: EE(Project)/Ynk Zone/WO/65/2019-20

: 06-11-19

: Fine Aggregate

: IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

: 06-11-19

: 1000 grams

Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
					Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
10 mm	0	0	0.0	100.0	100	100	100	100
4.75 mm	27	27	2.7	97.3	90-100	90-100	90-100	95-100
2.36 mm	55	82	8.2	91.8	60-95	75-100	85-100	95-100
1.18 mm	239	321	32.1	67.9	30-70	55-90	75-100	90-100
600 micron	205	526	52.6	47.4	15-34	35-59	60-79	80-100
300 micron	203	729	72.9	27.1	5-20	8-30	12-40	15-50
150 micron	191	920	92.0	8.0	0-10	0-10	0-10	0-15
Pan	80	1000	100.0	0.0	---	---	---	---

The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

: CP-2020-01-30-84

Date: 08-11-19

PHYSICAL PROPERTIES

Tests	Result	Requirements as per IS 383:2016
Water Absorption(%)	1.5	–
Specific Gravity	2.59	–
Material finer than 75 micron(%)	6.9	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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TEST RESULTS OF STEEL

Lab ID	:	**CP-2020-01-30-84** **Date: 12-11-19**
Project Name	:	Improvements CC Road and Drain and Slabs at Kattigenahalli in Ward No.05 Byatarayanapura Sub Division
Owner	:	Executive Engineer, KRIDL, Bangalore.
Customer's Reference	:	EE(Project)/Ynk Zone/WO/65/2019-20
Date of Receipt	:	11-11-19
Sample Type	:	Sunvik
Reference to BIS codes	:	IS 1786-2008, IS:1608-2005(RA 2011), IS 1599-2012.
Test Date	:	11-11-19

Identification of sample	Grade of the sample	Diameter of the steel bar	Weight of the sample	Yield stress	Tensile strength	Elongation	Bend test	Rebend test
		(mm)	(kg/m)	(N/mm2)	(N/mm2)	(%)		
Sunvik	Fe500	10	0.616	528	672	20.0%	Satisfactory	Satisfactory
Sunvik	Fe500	12	0.888	544	668	20.0%	Satisfactory	Satisfactory

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TEST REPORT OF PRECAST COVER SLAB

: **CP-2020-01-30-84** **Date: 20-11-19**

: Improvements CC Road and Drain and Slabs at Kattigenahalli in Ward No.05 Byatarayanapura Sub Division

: Executive Engineer, KRIDL, Bangalore.

: EE(Project)/Ynk Zone/WO/65/2019-20

: 16-11-19

: Precast Cover Slab (100mm)

: IS: 516 - 1959 Methods of Tests for Strength of Concrete

: 16/11/2019

Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
	(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm^2)	(N/mm^2)	(N/mm^2)
Cover Slab-1	75.51	100.48	1.116	4477	80.9	18.1	16.8	21.0
Cover Slab-2	75.49	100.52	1.122	4475	82.3	18.4	17.1	21.4
Cover Slab-3	75.50	100.51	1.118	4476	81.5	18.2	16.9	21.2

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TEST REPORT OF PRECAST COVER SLAB

: **CP-2020-01-30-84** **Date: 20-11-19**

: Improvements CC Road and Drain and Slabs at Kattigenahalli in Ward No.05 Byatarayanapura Sub Division

: Executive Engineer, KRIDL, Bangalore.

: EE(Project)/Ynk Zone/WO/65/2019-20

: 16-11-19

: Precast Cover Slab (250mm)

: IS: 516 - 1959 Methods of Tests for Strength of Concrete

: 16/11/2019

Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
	(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm^2)	(N/mm^2)	(N/mm^2)
Cover Slab-1	200.51	250.48	3.116	31570	240.9	7.6	7.1	8.9
Cover Slab-2	200.49	250.52	3.122	31564	242.3	7.7	7.1	8.9
Cover Slab-3	200.50	250.51	3.118	31567	241.5	7.7	7.1	8.9

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TEST REPORT OF CEMENT CONCRETE CUBES

: **CP-2020-01-30-84** **Date: 20/11/2019**

: Improvements CC Road and Drain and Slabs at Kattigenahalli in Ward No.05 Byatarayanapura Sub Division

: Executive Engineer, KRIDL, Bangalore.

: EE(Project)/Ynk Zone/WO/65/2019-20

: 15-11-19

: Drain Bottom Salb Concrete

: 150X150X150 mm

: M20 / 7 Days Compressive Strength

: IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 20/11/2019

Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
Drain Bottom Salb Concrete	M20	13/11/2019	20/11/2019	151.24 X 149.35 X 150.49	22588	**8.841**	418.1	18.5	18.7
Drain Bottom Salb Concrete	M20	13/11/2019	20/11/2019	150.29 X 151.43 X 151.52	22759	**8.681**	427.2	18.8	
Drain Bottom Salb Concrete	M20	13/11/2019	20/11/2019	149.74 X 149.66 X 151.48	22411	**8.639**	420.1	18.7	

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Authorized Signatory
Quality Manager

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Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST REPORT OF CEMENT CONCRETE CUBES

: **CP-2020-01-30-84** **Date: 11/12/2019**

: Improvements CC Road and Drain and Slabs at Kattigenahalli in Ward No.05 Byatarayanapura Sub Division

: Executive Engineer, KRIDL, Bangalore.

: EE(Project)/Ynk Zone/WO/65/2019-20

: 15-11-19

: Drain Bottom Salb Concrete

: 150X150X150 mm

: M20 / 28 Days Compressive Strength

: IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 11/12/2019

Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
Drain Bottom Salb Concrete	M20	13/11/2019	11/12/2019	150.38 X 149.97 X 151.69	22553	**8.185**	532.5	23.6	23.2
Drain Bottom Salb Concrete	M20	13/11/2019	11/12/2019	150.59 X 151.32 X 151.60	22787	**8.804**	505.0	22.2	
Drain Bottom Salb Concrete	M20	13/11/2019	11/12/2019	150.14 X 149.28 X 149.51	22414	**8.147**	536.8	23.9	

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